NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF APPLIED SCIENCES

DEPARTMENT OF RADIOGRAPHY

BSc. (Hons) IN RADIOGRAPHY PART II

IMAGING OF THE NEUROENDOCRINE SYSTEM

SRA 2208

Second Semester Examination Paper

March 2025

This question paper consists of three pages

Time Allowed : 3 hours

Total Marks : 100

Special Requirements: None

Examiner's Name : Mrs R. M. S. Ntaisi

INSTRUCTIONS

ANSWER ALL PARTS OF QUESTION 1 IN SECTION A AND ANY THREE QUESTIONS FROM SECTION B. SECTION A CARRIES 40 MARKS AND SECTION B CARRIES 60 MARKS.

MARK ALLOCATION

QUESTION	MARKS
1.	40
2.	20
3.	20
4.	20
5.	20
6.	20
Maximum possible mark	**100**

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SECTION A

1 (a) Differentiate between hot and cold thyroid nodules on Positron Emission Tomography (PET). [6]

(b) Assess the role of ultrasound in brain imaging. [6]

(c) i. Explain the causes of carpal tunnel syndrome. [3]
ii. Describe a radiographic projection to demonstrate carpal tunnel syndrome. [5]

(d) Recommend safety measures to be considered for an unconscious patient undergoing Magnetic Resonance Imaging (MRI) scan of the brain. [7]

(e) Differentiate between the following conditions, giving their appearances on Computed Tomography (CT) scan:

i. Epidural haemorrhage, [4]
ii. Intracerebral haemorrhage. [4]

(f) Explain the role of plain radiography in the imaging of the spinal cord. [5]

SECTION B

2. (a) Evaluate the role of PET in informing diagnosis in a patient suffering from epileptic seizures. [8]

   (b) Justify the use of angiography in the imaging of brain pathology. [12]

3. (a) Define the term vitreous haemorrhage. [1]

   (b) Differentiate the imaging characteristics of chronic and acute vitreous haemorrhage on ultrasound. [7]

   (c) Evaluate the use of the following modalities in imaging of the skin:

      i. Ultrasound, [6]
      ii. Radionuclide Imaging. [6]

4. (a) Explain the limitations of plain x-ray when imaging the nose. [5]

   (b) Describe a radiographic projection to localise a nasal foreign body. [5]

   (c) With respect to imaging of the nose, evaluate:

      i. the role of CT [5]

      ii. the role of MRI [5]

5. (a) Evaluate the role of the following modalities in imaging of the peripheral nervous system:

      i. Plain X-ray, [5]
      ii. Computed Tomography, [5]
      iii. Magnetic Resonance Imaging, [5]
      iv. Radionuclide Imaging. [5]

6. (a) A 45-year-old woman presents with hypertension, truncal obesity, purple striae on her abdomen and sudden mood changes. CT scans of the brain and abdomen are performed on the patient. Justify the possible resultant CT image appearances on:

      (i) CT scan of the brain, [5]
      (ii) CT scan of the abdomen. [5]

   (b) (i) Define the term pancreatitis. [2]

   (ii) Differentiate between acute and chronic pancreatitis, giving the radiological appearances on MRI. [8]

END OF EXAMINATION